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International Atomic Energy Agency safeguards: strengthening cooperation between the Agency and State or regional systems of accounting for and control of nuclear material

Working paper submitted by Switzerland

Introduction

1. The Treaty on the Non-Proliferation of Nuclear Weapons is the cornerstone of the global nuclear non-proliferation regime. Maintaining its integrity and upholding its credibility is key to international security and constitutes a responsibility shared by all States parties.

2. The 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons adopted an action plan with 64 actions. In action 32, it is recommended that the International Atomic Energy Agency (IAEA) safeguards should be assessed and evaluated regularly and that decisions adopted by the IAEA policy bodies aimed at further strengthening the effectiveness and improving the efficiency of IAEA safeguards should be supported and implemented. Along the same lines, in paragraph 20 of its resolution GC(56)/RES/13, adopted in September 2012, the IAEA General Conference urges the Secretariat to continue to improve the effectiveness and efficiency of safeguards through the use of a State-level approach in the planning, implementation and evaluation of safeguards activities.

Context: evolving safeguards implementation

3. The IAEA safeguards system, designed to detect and deter the diversion of nuclear material, equipment or nuclear facilities from prescribed purposes, has considerably evolved since the creation of IAEA. This holds true with regard not only to the expansion of the safeguards function following the adoption of the Treaty, but also to the ongoing development of concepts, approaches and procedures for safeguards implementation.

4. In this respect, IAEA has recently been moving towards a more qualitative, adaptable and less predictable approach to safeguards implementation. Guided by



the objectives of effectiveness and efficiency, IAEA is focusing its efforts where they are needed and trying to implement “smarter safeguards”. In this respect, IAEA is developing safeguards implementation to enhance effectiveness and efficiency through greater use of an approach based on State-level considerations. The State-level concept is central to this approach. IAEA is focusing safeguards implementation on the State as a whole rather than solely on the nuclear material and facilities in the State. In doing so, IAEA continues to utilize State-specific factors to develop customized State-level approaches. Although the concept is not new, it is evolving. Moreover, State-level approaches are now being developed for all States with a comprehensive safeguards agreement in force. That type of agreement is concluded by non-nuclear-weapon States parties to the Treaty on the basis of document INFCIRC/153 (Corrected). As non-nuclear-weapon States undertake not to manufacture nuclear weapons or any other nuclear explosive devices, the objective of a comprehensive safeguards agreement is the timely detection of diversion of significant quantities of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons or of other nuclear explosive devices or for purposes unknown, and deterrence of such diversion by the risk of early detection.

5. State-level approaches were initially developed and implemented for States with both a comprehensive safeguards agreement and an additional protocol in force and for which IAEA has drawn the broader conclusion that all nuclear material has remained in peaceful activities. Based on the model in document INFCIRC/540 (Corrected), an additional protocol strengthens IAEA capability to detect undeclared activities. The implementation of a comprehensive safeguards agreement and an additional protocol allows IAEA to draw the broader conclusion that all nuclear material has remained in peaceful activities. Implementation of State-level approaches for States for which the broader conclusion has been drawn has been referred to as “integrated safeguards”; that is, the optimum combination of safeguards measures based on the premise that, owing to increased assurance of the absence of undeclared nuclear material and activities for the State as a whole, the intensity of verification activities can be reduced.

Role of State or regional systems of accounting for and control of nuclear material within the evolution of safeguards implementation

6. Applying the State-level concept to all States with a safeguards agreement in force offers significant opportunities to further optimize safeguards implementation. However, only a cooperative relationship between the State and IAEA will make it truly effective and will allow for substantial benefits for both parties. Close cooperation between IAEA and States is therefore essential.

7. States parties to a comprehensive safeguards agreement have an obligation to establish and maintain a national system of accounting for and control of nuclear material; some of them have adopted a regional system. Such systems, just as the State as a whole, have an obligation to cooperate with IAEA to facilitate the implementation of safeguards.

8. In paragraph 24 of its resolution GC(56)/RES/13, adopted in 2012, the IAEA General Conference welcomed continued cooperation between the Secretariat and State and regional systems of accounting for and control of nuclear material and

encouraged them to increase their cooperation, taking into account their respective responsibilities and competencies.

9. The head of the Department of Safeguards, in a keynote address to the Institute of Nuclear Materials Management at its fifty-second annual meeting, on 18 July 2011, noted that the level of cooperation with the State system of accounting for and control of nuclear material was a key factor in the effectiveness of safeguards implementation in a State.

10. Cooperation should indeed be promoted. It facilitates the task of IAEA and also helps to optimize the use of its resources, as duplication of verification activities should be avoided. The long-term strategic plan of the Department of Safeguards therefore foresees greater use of effective State or regional systems of accounting for and control of nuclear material, realizing efficiencies in safeguards implementation where possible. Prospects for further optimization lie especially in States for which the broader conclusion has been drawn and maintained, where IAEA may be able to conduct fewer on-site activities and make greater use of the capabilities of State systems.

Key avenues for strengthening cooperation

11. Strengthening cooperation between IAEA and State or regional systems of accounting for and control of nuclear material is not a new topic. It was already discussed as part of a proposed approach to strengthened and more cost-effective safeguards implementation during Programme 93+2, which led to adoption of the additional protocol. The evolution of the State-level concept, as well as years of experience in implementing the additional protocol and integrated safeguards, nonetheless offer a new perspective on the issue.

12. State and regional systems of accounting for and control of nuclear material seem willing to strengthen their relationship with IAEA. However, persisting tensions slow down full optimization of existing provisions and arrangements, meaning that there is room for improvement in the area of cooperation between IAEA and such systems.

13. Further cooperation between IAEA and such systems would be beneficial for States and IAEA and would help implement more efficient and effective safeguards. With regard to IAEA, the effectiveness and efficiency of its safeguards depend, to a large extent, on the effectiveness and level of cooperation of State or regional systems of accounting for and control of nuclear material with IAEA. As regards effectiveness, a cooperative State system/State regulatory authority can help IAEA acquire more information to get a broader and more complete picture of States' nuclear activities. The credibility of IAEA conclusions would thereby be increased. As regards efficiency, more reliance on State systems of accounting for and control of nuclear material and enhanced cooperation has the potential to optimize the use of inspection resources in order to control overall costs. Under certain conditions, the system could undertake tasks that IAEA normally conducts, which could result in important cost savings.

14. With regard to States, closer cooperation with IAEA could have positive consequences at both the political and practical levels. On the one hand, it would show a strong commitment to safeguards and non-proliferation and increase international confidence in the peaceful nature of States' nuclear programmes. On

the other hand, strengthened cooperation could reduce safeguards impacts on nuclear facility operators. Integrated safeguards implementation, implying a close partnership between IAEA and the State regulatory authority, has, for instance, led to a significant drop in IAEA on-site presence. A further evolution in safeguards implementation consistent with this approach may lead to increased efficiencies without undermining effectiveness. Finally, a partnership between IAEA and the State has the potential to enhance national nuclear materials management capability, in particular for emerging nuclear States. The development of a strong national system is in fact a first step to close cooperation with IAEA.

15. Different avenues could be explored for strengthening cooperation between IAEA and State or regional systems of accounting for and control of nuclear material, such as the following:

(a) Strengthening State systems of accounting for and control of nuclear material/State regulatory authorities in the areas of nuclear material measurements, regulatory development, information management and facility oversight. In this respect, States may request an IAEA advisory service mission to evaluate their national systems and identify areas for improvement;

(b) More proactive State regulatory authorities. States should not look at their safeguards obligations in a narrow and purely legalistic way, but should adopt greater openness and goodwill by openly providing additional information about ongoing activities on a voluntary basis or by providing access to additional locations — even to non-nuclear locations — that have been identified to be of some interest. Such approaches increase confidence. Providing additional information to IAEA might first appear as a burden for the State, but later it might prove to be a real benefit for all parties involved in safeguards implementation;

(c) Efforts by IAEA itself, such as those currently being made within the Secretariat to make safeguards implementation less mechanistic. The idea that additional information provided by national, bilateral and regional systems should not lead to additional verification should especially be promoted within the Agency's staff as well as within member States;

(d) Strengthening communication between IAEA and States. Reporting safeguards conclusions in a transparent and timely manner should be a priority. Appropriate feedback on information provided by the State regulatory authority, as well as clear formulation of what is expected from it, will ensure cooperation. Both IAEA and States need to value the importance of day-to-day communication and cooperation. Avoiding miscommunication and ensuring continuous dialogue is the key to a cooperative partnership between a State regulatory authority and IAEA;

(e) Optimizing safeguards implementation. This could be done by increasing common use of technologies such as remote monitoring systems to replace, to the extent possible, the physical presence of inspectors, by performing inspection activities on the basis of the “one job, one person” principle and by cooperating in research and development and in the training of inspectors with the aim of achieving a reduction in the resources spent on both sides and leading to commonly agreed procedures;

(f) Strengthening the cooperation between IAEA and the State regulatory authority in the implementation of safeguards in new facilities. The IAEA General Conference has encouraged States concerned to promote early consultations with

IAEA at the appropriate stage on safeguards-relevant aspects for new nuclear facilities in order to facilitate future safeguards implementation.

Conclusion

16. Establishing and maintaining a solid partnership between IAEA and State or regional systems of accounting for and control of nuclear material still raises many challenges, but such challenges can be overcome. In that respect, there can be no general model for cooperation, given that each State, and consequently each State system of accounting for and control of nuclear material, has its own specificities, mainly based on its own national obligations and nuclear programme characteristics.

17. IAEA should help State or regional systems of accounting for and control of nuclear material to fulfil their obligations through good communication and by providing detailed guidelines and, when requested, support missions. IAEA should also be ready to make the most effective use of the capacity of State or regional systems. On the other hand, such systems have to be proactive in performing their tasks, which requires sufficient staff, resources and authority.

18. However, it is not enough to value the importance of a cooperative relationship as a key element of safeguards implementation. It is also crucial that all States and IAEA share a common vision of cooperation: one that relies on a positive attitude towards safeguards implementation and ensures the fulfilment of safeguards objectives and the effectiveness of safeguards.
